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# BUILDING GARAGES

*for*  
PROFITABLE OPERATION



RAMP BUILDINGS CORPORATION

A. I. A.  
Standard Classification  
35-M-3



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CCA



# Building Multi-floor Garages

*for*  
Storage Efficiency  
and Operating Economy

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Particularly  
in reference to  
*d'Humy Motoramps*  
*for*  
Inter-floor Travel

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Catalogue 25

September, 1925

**RAMP BUILDINGS**  
CORPORATION

21 East 40th Street

New York, N. Y.



# RAMP BUILDINGS CORPORATION

*Organized 1926*

## GARAGE ENGINEERS

### CONSULTANTS ON PROMOTION AND OPERATION

**T**HIS organization of Garage Engineers has been created, primarily, to develop the use of the d'Hunny Motorcar Ramp System of Garage Design—where there is an economic gain in its employment.

Its experience and specialized study have accumulated a knowledge of all phases of the Garage Industry, which enables it to be of great value to those who have not had the same intensive contact with the subject.

The breadth of this experience is indicated by our having compiled a record of upwards of 7,000,000 sq. ft. of garage floor space in buildings employing d'Hunny Motorcar Ramps, representing an investment of more than \$35,000,000. In addition, there have been other buildings on which we have advised, where d'Hunny Motorcar Ramps were not in question.

Ramp Buildings Corporation places its specialized knowledge at the disposal of architects and engineers, to the end that all new garages shall be economically efficient.\*

This Company has no stock building plans to sell, and does not contract to design or erect buildings. It serves, entirely, through the Architect.

\* See page 15 for brief presentation of the scope of the service of Ramp Buildings Corporation.



## Multi-Floor Garages

— Centrally Located —

### Are a Vital Need in Our Cities

**T**HIS "horseless age" into which the motor car has brought us so swiftly, finds our cities ill prepared for the change in transportation methods. Streets amply broad in the days of slow, horse-driven traffic give too little space for present needs, even when "No Parking" signs make the whole width available for moving traffic. And the time is surely coming when parking on the street will be prohibited in all congested districts—which means in all downtown districts, where cars are needed and used for business and pleasure.

#### What then?

The one logical answer is—take the "parking" indoors—build more garages. And, because the need is greatest where congestion makes land most costly, these garages must be of multi-floor type, that adequate capacity may be had to yield a proper return on the investment, with moderate storage fees.

#### Will It Pay to Erect a Downtown Garage Where Land Is So Valuable?

It will! Efficiently designed, properly located and under good management, a garage will return as high (or higher) yield on its investment cost, as an office building, apartment house or other structure. That is a strong statement, but one which is capable of proof. On a site adapted to the purpose, and in a district from which a garage can expect to draw sufficient patronage, such an enterprise ought to yield 15 to 25 per cent net on the invested capital. There are many variable factors, however, and in all fairness we would much prefer to analyze any certain project on its own merits. It is then possible to express a very definite opinion on the probable earning power, and demonstrate the reasons why. This is a function of our Service which will be dealt with in detail elsewhere in this book.

#### Who Is Interested

##### In Building Garages — and Why!

In this day of owner-driven cars, it is distinctly to the interest of every downtown property owner to have a modern parking and storage garage close at hand. Right here let us establish the fact that there is nothing about the modern "automobile hotel" which has any relation to the noisesome so-

called garage of five or ten years ago. That was a converted stable, where oil and grease, empty cans and discarded, worn-out parts were always in evidence, indoors and out. The modern garage, or automobile hotel, has only a driveway entrance to betray its identity. Architecturally on a par with surrounding buildings, with all its service facilities and business activity well indoors and out of both sight and hearing—it is in no way the slightest detriment to adjoining property, however highly developed.

But to point specifically to groups of property owners who have a direct interest in erecting modern, efficient garages:—

*Office Building Owners*, particularly those whose tenants are professional men for whom a motor car is largely a business necessity, or whose tenants would naturally prefer driving their cars to business instead of traveling with the crowd, will find the availability of an adjacent garage distinctly an asset. A number of instances are recorded where the building of a garage has forestalled a threatened loss in tenancy.

This modern idea of indoor parking as a convenience for office building tenants is making marked strides. This is not only a field for the enterprise of an individual property owner, but is one wherein the activity of a group of owners has resulted in the promotion of a garage to serve the tenants of their collective properties. We will be glad to point out, to anyone interested, specific examples and their results.

*Department Stores* now realize that parking for their motor cars is one of those "customer conveniences" whose development so surely influences the expansion of business. It requires little imagination to visualize the result of providing convenient parking for motor-car-owning shoppers. It increases the frequency and length of visits from regular customers, and attracts new patronage, of the desirable kind.

The lead which has been taken by far-sighted merchants in Cleveland, Pittsburgh, Newark (N. J.), Boston, New York, St. Louis, Seattle, Cincinnati, Dallas and other principal cities will undoubtedly be followed by other equally keen business men. An inspection of the list of d'Humy



## BUILDING GARAGES FOR PROFITABLE OPERATION



Carlton Garage, Washington, D. C.  
Wardman Construction Co., Archts.



The nicely furnished Waiting Room of a modern "Motoramp" Garage

Hotel Statler Garage, Buffalo, N. Y., Geo. B. Post & Sons, Archts.



Bass Knowlton & Co., Architects

Circle Motor Inn, Monument Circle, Indianapolis, Ind.



d'Humy Motorramps are standard for inter-floor travel.



## d'HUMY MOTORAMPS FOR INTER-FLOOR TRAVEL

Motoramp Garages on page 14 will disclose the names of nationally known Department Stores, and also, by the capacity, indicates the customer patronage for which their experience has led them to provide.

There are several phases of this special subject, in the charge for parking or offering it as a free service, in the average customer parking time, etc., on which we have special information. You may consult us freely.

*Hotel Operators* have a very decided interest in providing both resident and transient guests with garage service of the same high standard on which the reputation of their hostelry is founded. The strategic location of the hotel, in respect to the center of business, amusement and other activities is likewise an ideal location for a modern garage. Hotels, in many cities, with Hotel Statler, Buffalo, as a nationally advertised example, are investing in garages as an adjunct to the hotel property. Naturally, such a garage must be the last word in convenience to the hotel-guest patron, with ready access to every car storage space, ability to enter and leave at any time, and with service appointments to correspond.

*Apartment Houses*, too, are awaking to the advantage of making the provision of motor car housing a part of their lease-contract. Apartment House Garages may be integral with the apartment structure, adjoining, or as closely adjacent as possible. The list of apartment house garages, among those whose plans have been reviewed by us, indicates the importance of the idea in the planning of the more modern developments.

*Large Clubs*, and particularly those with a resident membership, profit by owning and operating a large private garage. It is noteworthy that one club, at least, has planned their garage as an integral part of the Clubhouse building.

*Theater Owners, Restaurants* and others who entertain large numbers of people are particularly interested in attracting patronage from among the motor car owners. Dearth of parking facilities will divert them to attractions in less congested sections. While only occasionally justifying the erection of a garage for its own benefit alone, a theater is often a leading spirit in projecting a garage for the joint advantage of a group of owners of various properties.

*Experienced Garage Operators*, whose contact with the business side of garaging has given them confidence in its profit making possibilities, are quickly appreciative of the investment advantages of the modern-idea garage. To them, the development of a more efficient and economical type of

multi-floor building opens an avenue for the expansion of their activities, and right in those downtown sections where the development is most needed.

### **To Estimate the Investment Required Is Not Difficult**

The stability of the modern garage business, based on the operation of a well designed structure, has been demonstrated to the point where the securing of first mortgage money is not difficult. Since loans can be secured on a garage building in the same proportion of value as on other business structures, it is not difficult to establish a sound financial set up—and likewise to calculate the net return on the capital investment. We quote here the estimates on which the development of three different projects were based:

### **Cost and Earning Power of a 200-Car, 3-Story Garage**

For a City of 50,000 to 75,000 Population

|   |                     |
|---|---------------------|
| <b>Investment</b>   |                     |
| Land, 13,334 sq. ft. at \$5.00 .....  | \$ 66,670.00        |
| Building and Equipment, 200 cars, 3 floors, 40,000 sq. ft. at \$2.25 .....        | 90,000.00           |
| Cash Working Capital, Organization Expense, and Charges during Construction ..... | 18,330.00           |
| <b>Total Investment .....</b>   | <b>\$175,000.00</b> |
| <b>Capitalization</b>   |                     |
| 6% First Mortgage, 60% of Land, Building and Equipment .....                      | \$105,000.00        |
| Equity Capital .....  | 70,000.00           |
| <b>Total Capital .....</b>  | <b>\$175,000.00</b> |
| <b>Operating Revenue</b>  |                     |
| <b>Storage:</b>   |                     |
| 75 Day and Evening Transient Hourly, 360 days a year at \$.50 each .....          | \$ 13,500.00        |
| 10 Overnight Transient, 300 nights a year, at \$.75 each .....                    | 2,250.00            |
| 150 Day Parking, Monthly Leases, at \$7.50 a month .....                          | 13,500.00           |
| 25 Night Storage, Monthly Leases, at \$8.50 a month .....                         | 2,550.00            |
| 40 24-Hour Storage, Monthly Leases, at \$10.00 a month .....                      | 4,800.00            |
| <b>Total Storage (90% Capacity) .....</b>   | <b>\$ 36,600.00</b> |
| Washing and Polishing, 8,000 cars annually at \$1.75 .....                        | 14,000.00           |
| Gasoline Sales, 60,000 gals. annually at \$.02½ profit .....                      | 1,500.00            |
| Oil Sales, 1,500 gals. annually at \$.40 .....                                    | 600.00              |
| Accessory Sales, profit .....   | 500.00              |
| Service, profit .....   | 500.00              |
| Rental from Stores, ground floor .....  | 1,500.00            |
| <b>Total Operating Revenue .....</b>  | <b>\$ 55,200.00</b> |
| <b>Operating Expense</b>  |                     |
| Administration .....  | \$ 800.00           |
| Payroll .....   | 17,620.00           |
| Advertising and Selling .....   | 1,800.00            |
| Garage and Office Supplies .....  | 1,200.00            |
| Insurance .....   | 600.00              |
| Heat .....  | 900.00              |
| Light and Power .....   | 450.00              |
| Water .....   | 250.00              |
| Telephone .....   | 150.00              |
| Taxes, except Federal Income .....  | 3,500.00            |
| Loss and Damage .....   | 250.00              |
| Maintenance and Repairs .....   | 600.00              |
| Miscellaneous .....   | 400.00              |
| <b>Total Operating Expense .....</b>  | <b>\$ 28,520.00</b> |



# BUILDING GARAGES FOR PROFITABLE OPERATION

## Operating Summary

|                                  |             |
|----------------------------------|-------------|
| Operating Revenue                | \$55,200.00 |
| Operating Expense                | 28,520.00   |
| Operating Profit                 | \$26,680.00 |
| % of Total Investment            | 15.2%       |
| Deductions from Operating Profit |             |
| 6% Mortgage Interest             | \$ 6,300.00 |
| 3% Mortgage Retirement           | 3,150.00    |
| 1% Depreciation                  | 900.00      |
| Federal Income Tax               | 3,225.00    |
|                                  | 13,575.00   |
| Net Profit                       | \$13,105.00 |
| % of Equity Capital              | 18.7%       |

## Cost and Earning Power of a 400-Car, 5-Story Garage

For a City of 300,000 to 500,000 Population

|  |              |
|--|--------------|
| <b>Investment</b>  |              |
| Land, 16,000 sq. ft. at \$15.00  | \$240,000.00 |
| Building and Equipment, 400 cars, 5 floors,<br>80,000 sq. ft. at \$2.90        | 232,000.00   |
| Cash Working Capital, Organization Expense,<br>and Charges during Construction | 52,000.00    |
| Total Investment   | \$524,000.00 |
| <b>Capitalization</b>  |              |
| 6% First Mortgage, 60% of Land, Building<br>and Equipment                      | \$284,000.00 |
| Equity Capital   | 240,000.00   |
| Total Capital  | \$524,000.00 |
| <b>Operating Revenue</b>   |              |
| Storage:   |              |
| 250 Day and Evening Transient Hourly,<br>360 days a year at \$.50 each         | \$ 45,000.00 |
| 25 Overnight Transient, 300 nights a year<br>at \$1.00 each                    | 7,500.00     |
| 275 Day Parking, Monthly Leases, at<br>\$12.00 a month                         | 39,600.00    |
| 75 Night Storage, Monthly Leases, at<br>\$13.50 a month                        | 12,150.00    |
| 75 ad Hour Storage, Monthly Leases, at<br>\$15.00 a month                      | 13,500.00    |
| Total Storage (90% Capacity)   | \$117,750.00 |
| Washing and Polishing, 12,000 Cars annually<br>at \$2.00 each                  | 24,000.00    |
| Gasoline Sales, 100,000 gals. annually at<br>\$.02 1/2 profit                  | 2,500.00     |
| Oil Sales, 2,500 gals. annually at \$.40 profit                                | 1,000.00     |
| Accessory Sales, profit  | 1,000.00     |
| Service, profit  | 900.00       |
| Rental from Stores, ground floor   | 3,000.00     |
| Total Operating Revenue  | \$150,150.00 |
| <b>Operating Expense</b>   |              |
| Administration   | \$ 2,000.00  |
| Payroll  | 32,200.00    |
| Advertising and Selling  | 3,600.00     |
| Garage and Office Supplies   | 2,000.00     |
| Insurance  | 1,500.00     |
| Heat   | 1,500.00     |
| Light and Power  | 900.00       |
| Water  | 500.00       |
| Telephone  | 250.00       |
| Taxes, except Federal Income   | 12,000.00    |
| Loss or Damage   | 350.00       |
| Maintenance and Repairs  | 1,000.00     |
| Miscellaneous  | 1,000.00     |
| Total Operating Expense  | \$ 58,800.00 |

## Operating Summary

|                                  |              |
|----------------------------------|--------------|
| Operating Revenue                | \$150,150.00 |
| Operating Expense                | 58,800.00    |
| Operating Profit                 | \$91,350.00  |
| % of Total Investment            | 17.4%        |
| Deductions from Operating Profit |              |
| 6% First Mortgage                | \$ 17,040.00 |
| 3% Mortgage Retirement           | 8,520.00     |
| 1% Depreciation                  | 2,320.00     |
| Federal Income Tax               | 11,130.00    |
|                                  | 39,010.00    |
| Net Profit                       | \$52,340.00  |
| % of Equity Capital              | 21.8%        |

## Cost and Earning Power of a 750-Car, 7-Story Garage

For a City of More Than 1,000,000 Population

|  |                |
|--|----------------|
| <b>Investment</b>  |                |
| Land, 21,400 sq. ft. at \$25.00  | \$535,000.00   |
| Building and Equipment, 750 cars, 7 floors,<br>150,000 sq. ft. at \$3.50         | 525,000.00     |
| Cash Working Capital, Organization Ex-<br>pense, and Charges during Construction | 120,000.00     |
| Total Investment   | \$1,180,000.00 |
| <b>Capitalization</b>  |                |
| 6% First Mortgage, 60% of Land, Build-<br>ing and Equipment                      | \$636,000.00   |
| Equity Capital   | 544,000.00     |
| Total Capital  | \$1,180,000.00 |
| <b>Operating Revenue</b>   |                |
| Storage:   |                |
| 300 Day and Evening Transient Hourly,<br>360 days a year at \$.50 each           | \$ 54,000.00   |
| 100 Overnight Transient, 300 nights a<br>year at \$1.50 each                     | 45,000.00      |
| 400 Day Parking, Monthly Leases, at<br>\$15.00 a month                           | 72,000.00      |
| 150 Night Storage, Monthly Leases, at<br>\$18.00 a month                         | 32,400.00      |
| 200 24-Hour Storage, Monthly Leases, at<br>\$30.00 a month                       | 72,000.00      |
| Total Storage (90% Capacity)   | \$275,400.00   |
| Washing and Polishing, 22,500 cars annu-<br>ally at \$2.25 each                  | 50,625.00      |
| Gasoline Sales, 200,000 gals. annually at<br>\$.02 1/2 profit                    | 5,000.00       |
| Oil Sales, 5,000 gals. annually at \$.40<br>profit                               | 2,000.00       |
| Accessories Sales, profit  | 2,000.00       |
| Service, profit  | 1,500.00       |
| Rental from Stores, ground floor   | 4,000.00       |
| Total Operating Revenue  | \$340,525.00   |
| <b>Operating Expense</b>   |                |
| Administration   | \$ 3,000.00    |
| Advertising and Selling  | 4,800.00       |
| Payroll  | 56,000.00      |
| Garage and Office Supplies   | 4,500.00       |
| Insurance  | 2,500.00       |
| Heat   | 2,000.00       |
| Light and Power  | 1,800.00       |
| Water  | 800.00         |
| Telephone  | 300.00         |
| Taxes, except Federal Income   | 27,500.00      |
| Loss and Damage  | 500.00         |
| Maintenance and Repairs  | 2,000.00       |
| Miscellaneous  | 2,500.00       |
| Total Operating Expense  | \$108,200.00   |

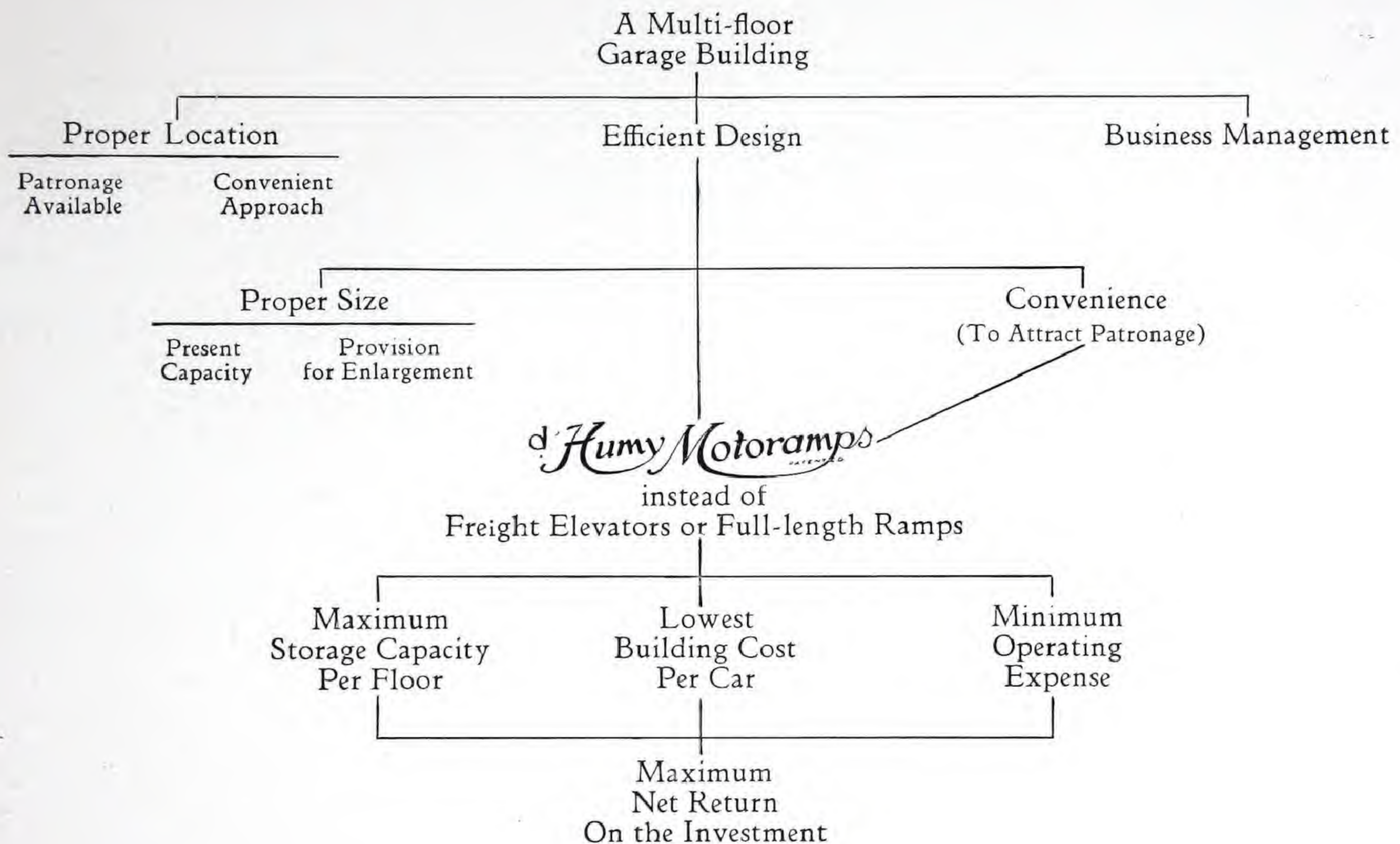
## Operating Summary

|                                  |              |
|----------------------------------|--------------|
| Operating Revenue                | \$340,525.00 |
| Operating Expense                | 108,200.00   |
| Operating Profit                 | \$232,325.00 |
| % of Total Investment            | 19.7%        |
| Deductions from Operating Profit |              |
| 6% Mortgage Interest             | \$38,160.00  |
| 3% Mortgage Retirement           | 19,080.00    |
| 1% Depreciation                  | 5,250.00     |
| Federal Income Tax               | 28,385.00    |
|                                  | 90,875.00    |
| Net Profit                       | \$141,450.00 |
| % of Equity Capital              | 26%          |

The anticipated earnings developed in these financial estimates are in line with the results obtained in the operation of garage properties of equivalent size—where storage efficiency, operating economy and business management are of a high standard.



## The Factors of Success in a Garage Project



THE graphic analysis of the factors which contribute to the financial success of a city garage is based on the erection of a multi-floor building as the only type economically practical when the cost of the proposed mid-city plot is considered.

*Proper Location* is a fundamental necessity. The availability of capacity patronage must be established. The plot must be strategically situated in its relation to main traffic thoroughfares. It must be of a size which will permit the erection of an efficient building. These and other factors must be weighed with care, and preferably by an expert. The rendering of such advice is one of the functions of Ramp Buildings Corporation (see Page 15).

*Efficient Design* has so vital an influence on the net income from a building that it can make or break a garage venture. In a multi-floor building two things must be achieved, maximum storage

efficiency and minimum operating expense. The provision for moving the cars to and from their appointed storage spaces on upper floors is a deciding factor in arranging the layout of car berths on the storage floors. That the d'Humy Motoramp System of Building Design achieves a higher overall efficiency than is otherwise possible is demonstrated in the following pages.

*Business Management* introduces the personal element into a project which has been scientifically laid out. Experience is essential and a standardization on methods along lines which, through evolution, have come to be recognized as most successful. To those who wish to place the operating management of a new and important project in competent hands, Ramp Buildings Corporation wishes to introduce its Operating Division. This removes the question "how shall we operate the property" as a possible drawback to going ahead with an otherwise desirable project.



## Inter-floor Travel in Garages

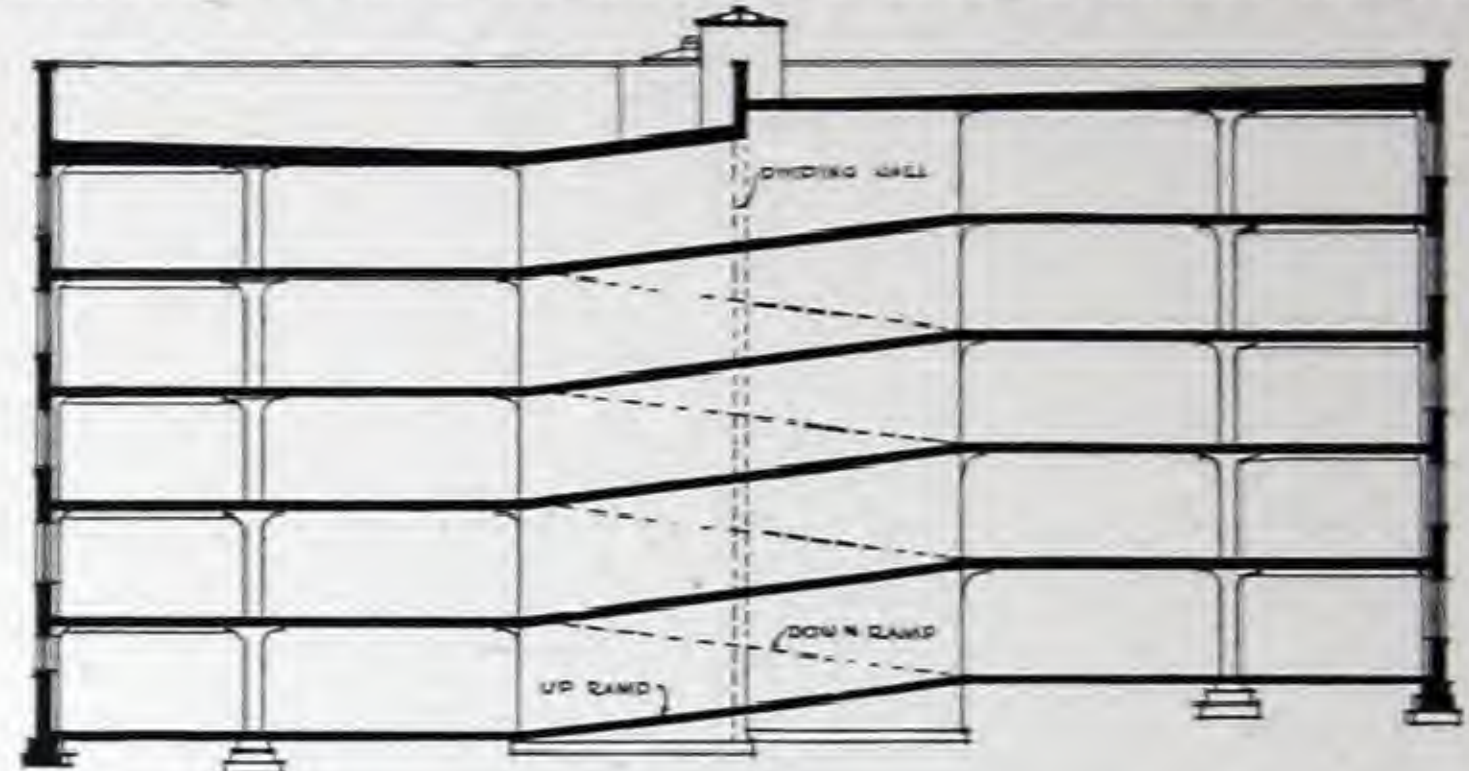
**I**N DESIGNING a multi-floor garage, provision must be made for moving the motor cars to and from each of the several storage floors. There are three options: to install freight elevators, to build-in ordinary ramps from floor to floor, or to utilize d'Humy Motorramps. d'Humy Motorramps are greatly superior for the big majority of garages. There are conditions, however, for which they are unsuited, and where elevators or ordinary ramps are of advantage.

### *The d'Humy Motorramp System of Building Design — What It Is*

The d'Humy Motorramp System of Building Design may best be described as a building of staggered floor construction, divided into two units, the level of the floors in one unit being substantially midway between the level of the floors in the other unit.

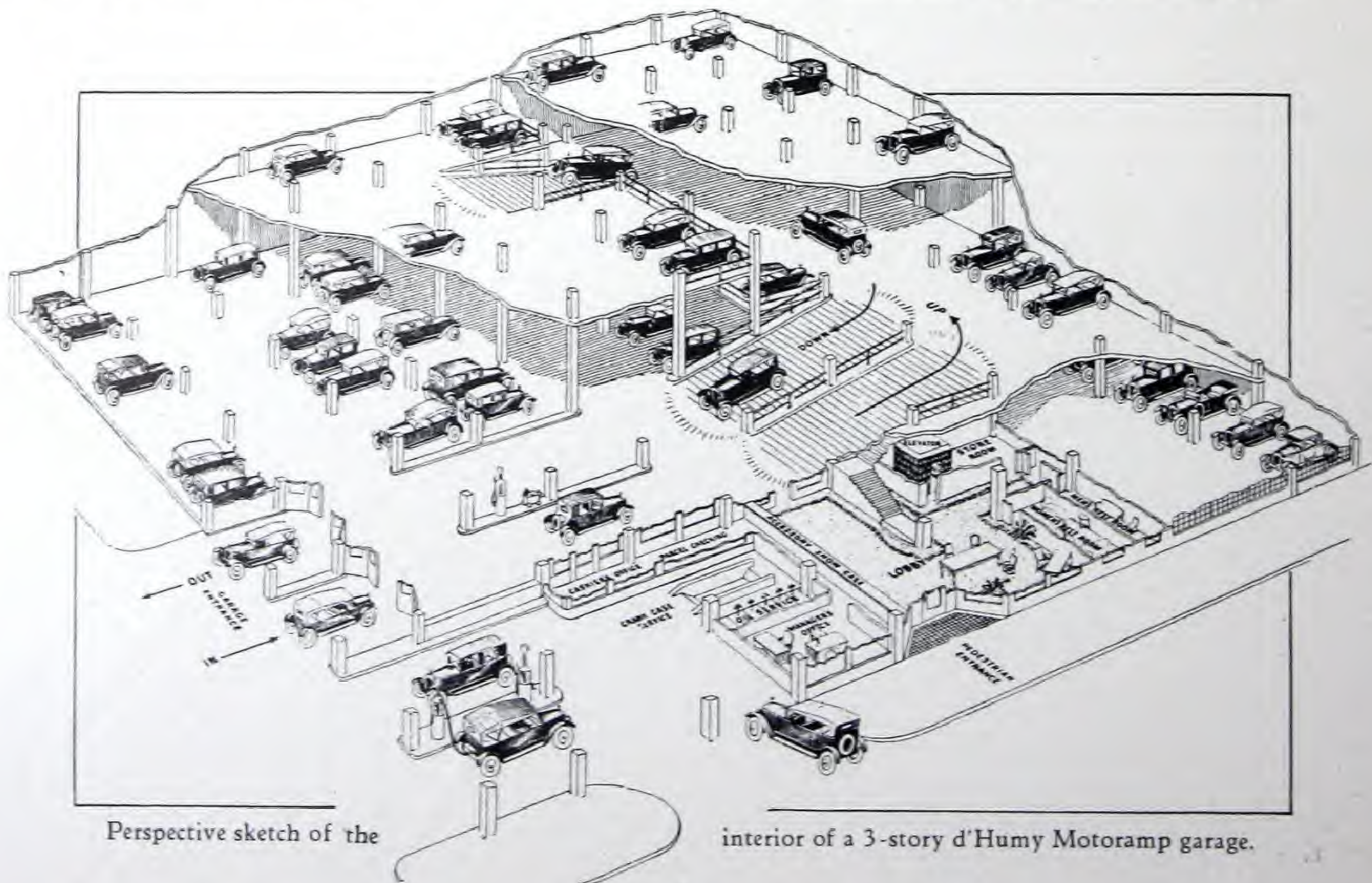
The main aisles of one unit are connected to the main aisles of the other by inclined driveways, known as d'Humy Motorramps.

The Motorramps connect the aisles of one unit with those of the other in such a way that it is possible for an automobile to ascend under its own



Typical cross section through the ramps of a d'Humy Motorramp garage.

power from the street level to the upper floors of the building, rising by means of the inclined driveways a height of one-half story at a time. Rising only a half-story at a time, a short ramp is possible and, for this reason, the d'Humy Motorramp is easily arranged-for in the design of buildings otherwise unsuitable for ramp construction.

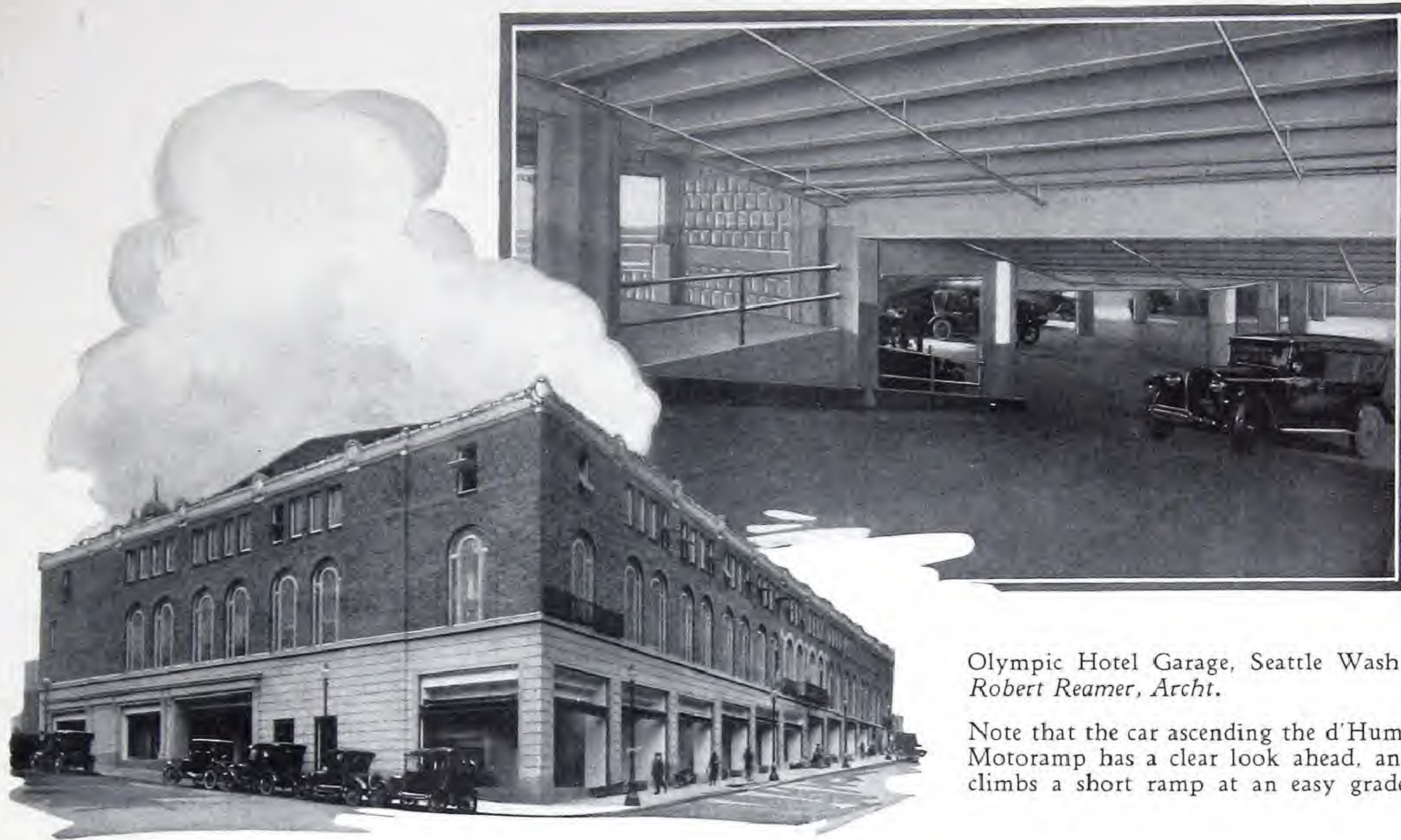


Perspective sketch of the

interior of a 3-story d'Humy Motorramp garage.



## d'HUMY MOTORAMPS FOR INTER-FLOOR TRAVEL



Olympic Hotel Garage, Seattle Wash.,  
*Robert Reamer, Archt.*

Note that the car ascending the d'Humy Motoramp has a clear look ahead, and climbs a short ramp at an easy grade.

d'Humy Motoramps are virtually extensions of the public highway leading to the upper floors of a building.

### **Where d'Humy Motoramps Should Be Used**

In any garage of two stories and basement or greater height, where the plot is at least 50 feet wide and 100 feet deep, d'Humy Motoramps can be proven to give the building a net earning power much beyond that otherwise attained. They give maximum car storage capacity and minimum operating expense. The garage's patrons enjoy the superior convenience of ramps, with a greater measure of safety. They drive direct from the street to any appointed storage space, without waiting or delay—and leave at will.

The practical limit of height of a d'Humy Motoramp equipped building has not been established at this writing. Eight-story garages are in successful operation and higher ones are contemplated.

### **Where Elevators Should Be Used**

In a multi-floor building so narrow as to be of less than 50 ft. width, and of three stories or greater height, an elevator is the practical thing to use. The narrow building width prohibits the use

of ramps, because the turning radius of the average motor car is 50 feet, and of the long wheelbase types 60 feet.

Automobile storage buildings for the dead storage of dealers' stocks of new cars may be equipped with elevators. In dead storage each floor is filled to its absolute limit of capacity. There is no need for leaving cross or other aisles open, as there is no standard of "instant service" to be adhered to in removing a car on call. In a public parking garage, however, a patron must always be able to enter or leave at will.

Except in the instances cited, elevators make a multi-floor garage less profitable than it would be with d'Humy Motoramps—and have the operating handicap of being slow and even dangerous.

### **Where Ordinary Ramps May Be Used**

In a small two-story garage, ordinary or floor to floor ramps, either straight or curved, may be used. There are cases, however, where the slope of the ground makes the use of d'Humy Motoramps decidedly advantageous over ordinary ramps even in a two-story building, because of the saving in the excavation cost.

In a building of more than two stories' height these old-style ramps are so wasteful of storage space, when compared with d'Humy Motoramps, as to be out of the question.



## Comparative Storage Efficiencies

Achieved with

Elevators, Ordinary Ramps and d'Humy Motoramps

**G**ARAGE income is based on the number of cars which can be accommodated on a storage floor of given dimensions. It is vital to the success of a garage enterprise that the highest possible efficiency in the layout of car storage spaces be achieved.

Every car in live storage should be given direct frontage on an unobstructed aisle. There are exceptions, of course, but it is a fundamental of good business to give every patron the opportunity to remove his car at any time. Some plot dimensions, however, make it practically impossible to avoid one double row of cars, that is, one row in front of another.

It is obviously possible to increase the capacity of any building by permitting a reasonable amount of car storage in the dead-end aisles. This advantage might accrue to an elevator or ramp building in practically equal degree, and is therefore ignored in the following comparisons.

### Space Saving Advantages of d'Humy Motoramps

A single roadway d'Humy Motoramp occupies about the same floor space as one elevator. A double roadway d'Humy Motoramp, in a larger garage, requires considerably less than the space needed for even the minimum elevator equipment that could be considered for such a building. While in either case ordinary floor-to-floor ramps require, at the very least, two to three times as much space.

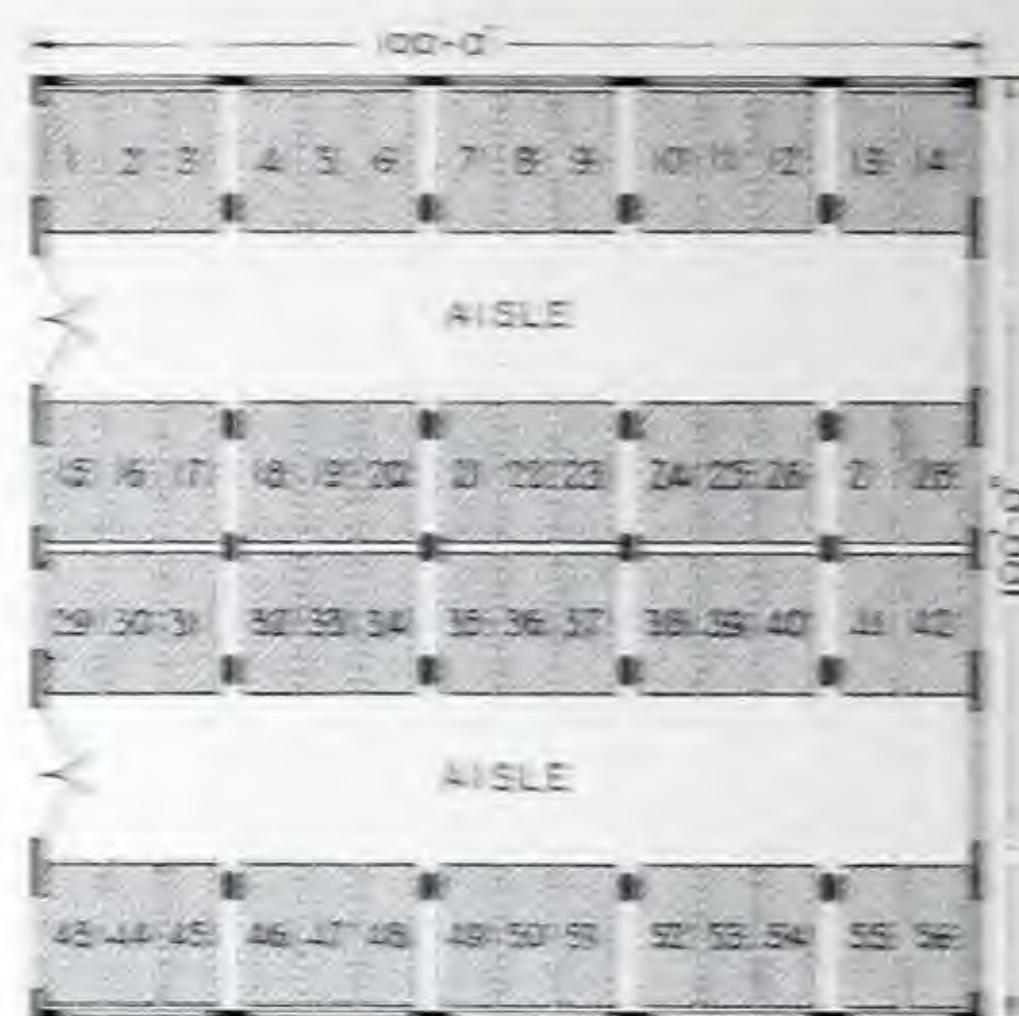
d'Humy Motoramps have the compactness and flexibility of location of the elevator, but none of its upkeep and operating expense. They have all the convenience and operating economy of the ordinary ramp, with a decided advantage in safety of use.

d'Humy Motoramps, therefore, have the good points of both elevators and ramps, with the disadvantages of neither.

### A Basis of Comparison — the Ideal 100% Storage Efficiency in a One-Story Garage

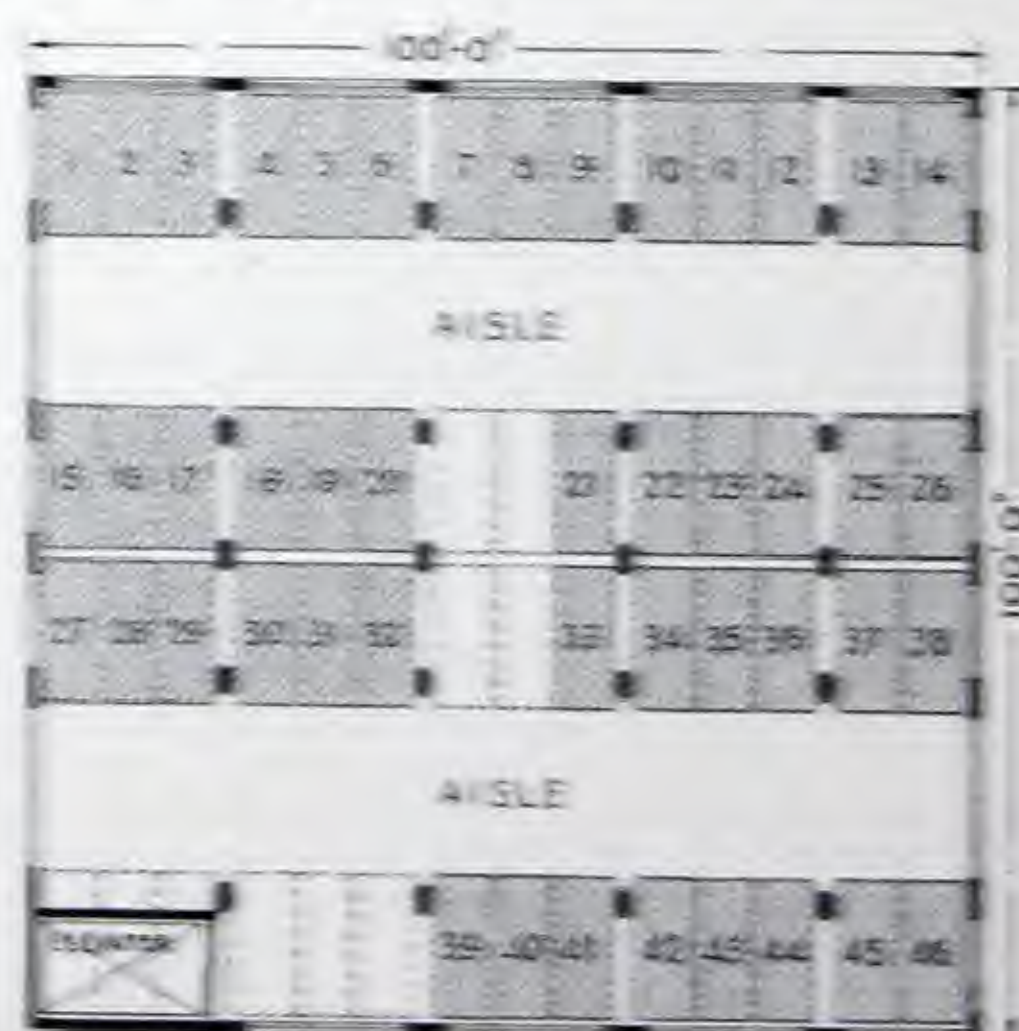
The space economy of the d'Humy Motoramp System is easily proven. In order to have an accurate basis of comparison for the d'Humy Motoramp System as compared to elevators and to other types

of ramps, let us first consider a single-story building. It is assumed that this building is 100 feet by 100 feet, and that four rows of cars are parked in it.



The cars face on two aisles. Allowing  $6\frac{1}{2}$  feet aisle frontage for each car and  $1\frac{1}{2}$  feet for each of the six columns, 14 cars may be accommodated in each row, or a total of 56 cars on the entire floor. Fifty-six cars in a building 100 x 100, therefore, represents 100% efficiency, inasmuch as there is no space wasted and no space devoted to inter-floor travel.

### 82.14% Efficiency —in an Elevator Garage



Let us assume throughout the remaining discussion that the building is four stories high. One ele-



## d'HUMY MOTORAMPS FOR INTER-FLOOR TRAVEL

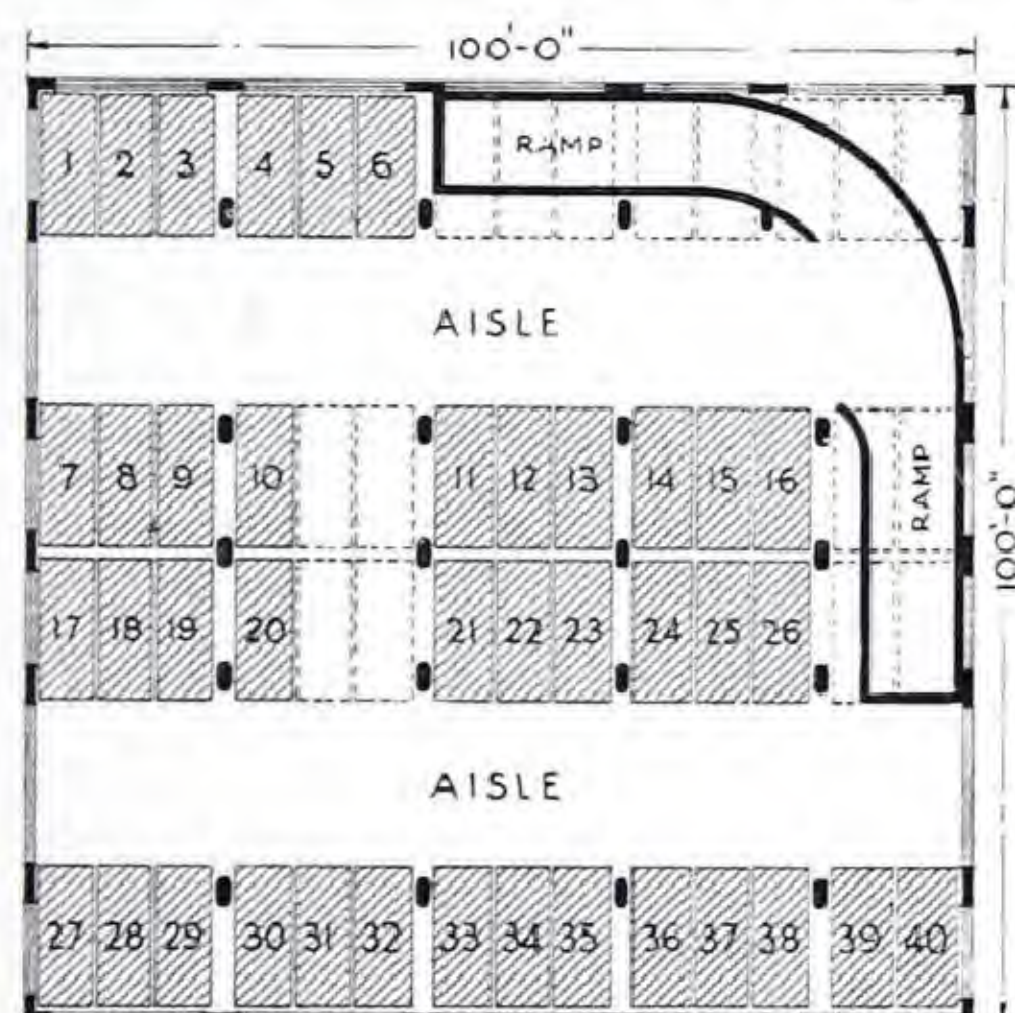
vator is the least that could be considered satisfactory under ordinary circumstances. The logical and most popular position for this elevator is in the front corner of the building. The space occupied by the elevator will be 10 x 20 feet. The elevator itself, therefore, reduces the storage capacity by three car spaces. The approach to the elevator, on the upper floors, will require three more car spaces. In addition, a connecting passage will be required between the two main aisles. This will occupy the space devoted to four cars. Inter-floor travel by elevator, therefore, causes a loss of 10 car spaces per floor.

The upper floors of the elevator garage will store 46 cars per floor, giving an efficiency of 82.14%.

### 71.42% Efficiency

#### *in a Garage with Ordinary Ramps*

When the old type of ramp is employed, its location will vary from floor to floor, but the number of cars which may be stored per floor remains practically constant. The typical floor plan herewith, shows an efficient method of locating the ramps.



The ramp itself occupies space devoted to 12 cars, and the connecting passageway between the two aisles requires 4 car spaces in addition, making 16 in all.

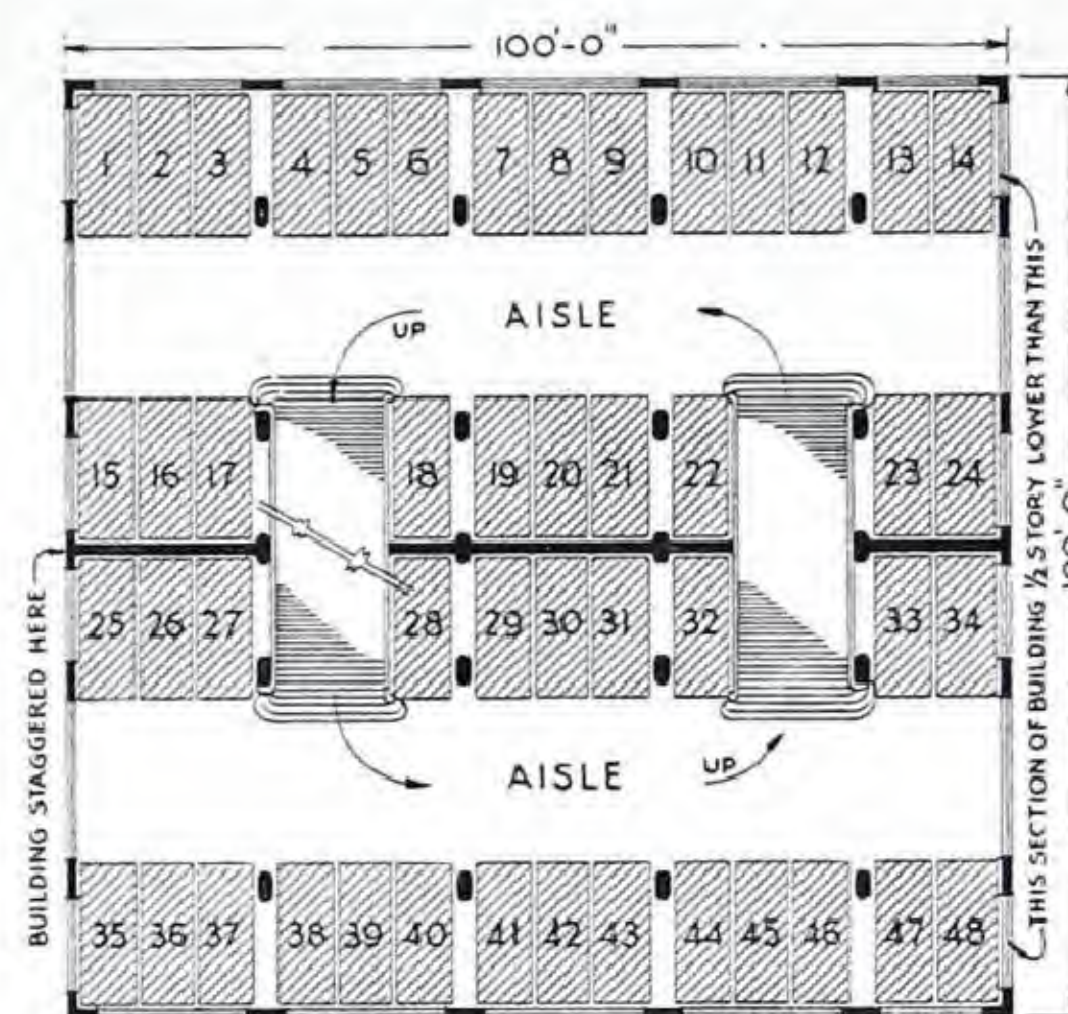
Thus the best storage capacity per floor is 40 cars, giving an efficiency of 71.42%.

### 100% Convenience

#### *and 85.7% Storage Efficiency— made Possible by d'Humy Motoramps*

The basis of the d'Humy Motoramp System is the division of the building vertically into two sections, the floors in one being at levels substantially midway between the floors in the other. The floors in these two sections are connected by inclined passages or ramps, each ramp rising one-half story at a time.

Referring to the sketch, it will be seen that the d'Humy Motoramps are merely connecting passages between the main aisles, and that each occupies the space of four cars.



Referring again to the sketch of the elevator building, it will be noted that this layout requires one connecting aisle occupying four car spaces, and that the elevator and elevator approach take six car spaces. In other words, this elevator building requires 10 car spaces per floor for inter-floor transportation, as against 8 car spaces per floor for the d'Humy Motoramp System. d'Humy Motoramps permit storage of two cars per floor more than with a single elevator.

### *Increased Earning Achieved By Using d'Humy Motoramps*

Reducing this to dollars and cents, the increased earning per year when d'Humy Motoramps are employed in a four story building of these dimensions is:

\$4,320.00 over that of an elevator  
equipped building, and  
\$7,680.00 over that of a building with  
ordinary ramps.

The increased earning over that of the building with an elevator is calculated as follows:

|   |            |
|---|------------|
| Added income at \$20 per car space per month (storage and service) for 8 car spaces (2 extra on each of 4 floors) ..... | \$1,920.00 |
| Saving of upkeep and depreciation on elevator .....   | 400.00     |
| Saving of power cost of operating elevator .....  | 700.00     |
| Saving of salary of elevator operator ..  | 1,300.00   |
|   | <hr/>      |
|   | \$4,320.00 |

The yearly saving effected by using d'Humy Motoramps instead of ordinary ramps is entirely a



## BUILDING GARAGES FOR PROFITABLE OPERATION

matter of car storage. The d'Humy Motoramp building shows remarkably increased earning because of its—

Added income at \$20.00 per car per month (storage and service) for 32 cars (8 extra on each of 4 floors) . . . \$7,680.00

### *Demonstrating Comparative Efficiencies for a Garage Building of Other Specified Dimensions*

We will be glad to sketch-plan, in miniature, comparative storage layouts for any specific garage which may be in contemplation. This is done without charge or obligation, and places before the architect the best ideas evolved in years of specialization.

## d'Humy Motoramp Advantages

### in Convenience, Safety and Service

**C**OMPARED with an elevator-equipped garage a building with d'Humy Motoramps offers so much convenience to the garage patron that it must inevitably attract greater patronage. The entering motorist has immediate access to whatever storage space is assigned to him; he drives direct to any space on any floor. Likewise he can leave at will, without waiting for an elevator, and unhindered by others ready to leave at the same time. Compare this, for instance, with the former after-theater congestion in an elevator garage and you will appreciate the 100% convenience of d'Humy Motoramps.

#### *Easy Grade*

The usual grade of d'Humy Motoramps is 15%, an incline which any standard automobile can negotiate easily in second gear at 12 miles per hour. The up-grade is not formidable even to a timid driver and descent equally simple.

#### *Short Length and Open Sides*

d'Humy Motoramps are ordinarily not more than 37 feet in length, or the equivalent of approximately two car lengths. This, coupled with the fact that the sides are open and the approaches to the ramp-incline perfectly visible, removes all hesitancy on the part of car operators of either sex or any degree of expertness.

#### *Complete Visibility Assures Safety*

It cannot be too strongly emphasized that the complete "look-ahead" afforded by an open-side

Motoramp contrasted with the long, dark tunnel of the old-time ramp, not only makes this new form of inter-floor travel more inviting, but contributes a positive measure of safety.

#### *Large Capacity*

At a car speed of 12 miles per hour (considered entirely safe on any d'Humy Motoramp with normal-width aisles on the various floor levels) and with one-direction traffic on the ramp, 25 cars per minute can be handled with ease. This Motoramp capacity will empty the entire content of a 200-car garage in 8 minutes. Contrast this, if you will with 1 car per 2-minute elevator trip and a probable 3 hours total time (even with two elevators) to remove the 200 cars from an elevator equipped building.

#### *No Operating Cost*

In a d'Humy Motoramp Garage there is no operating expense for moving cars from floor to floor. Every car travels under its own power and pays for its own vertical transportation.

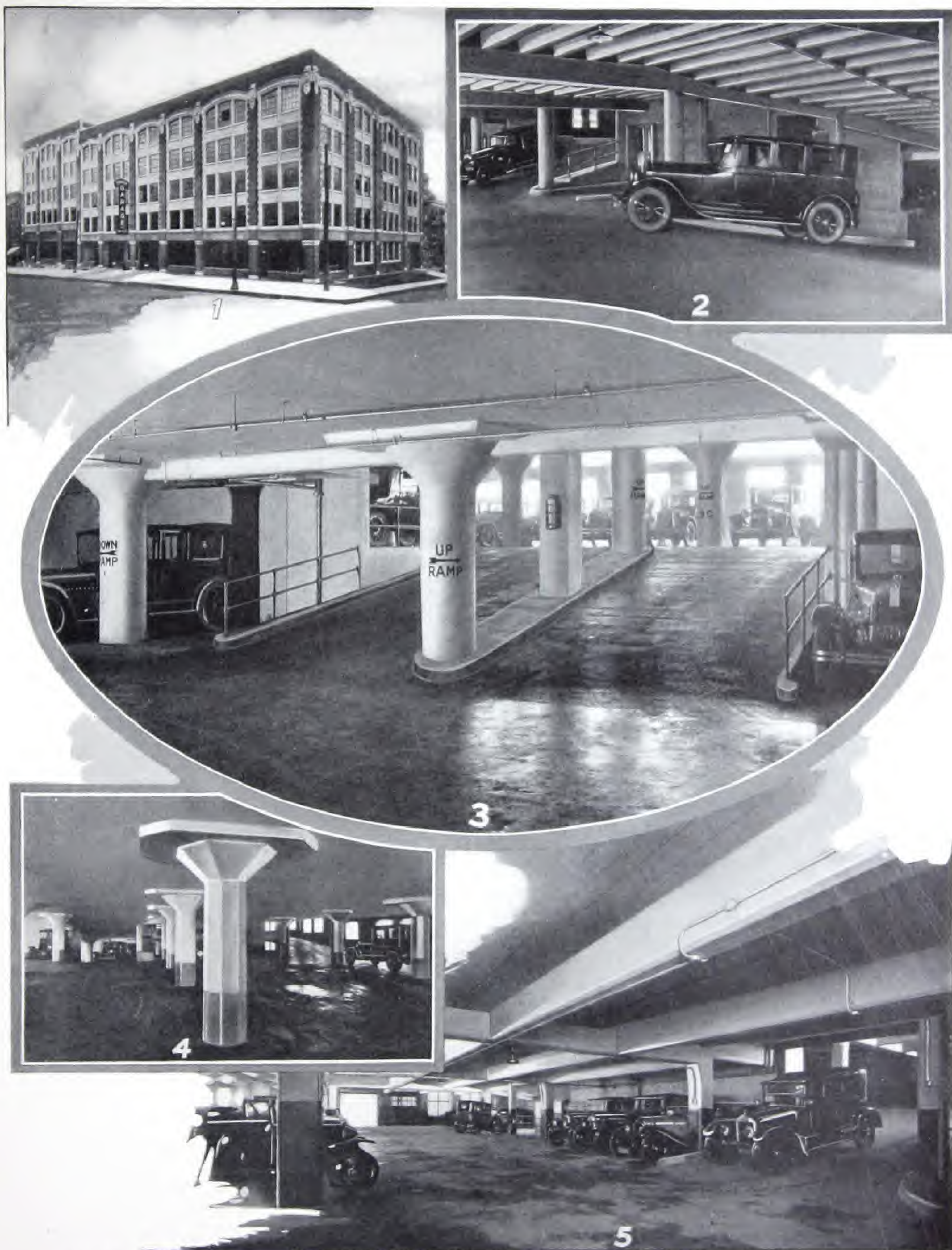
#### *Extra Storage Capacity for Emergencies*

The usual location of d'Humy Motoramps in the center of the building causes dead-end aisle spaces—in direct contrast to old-style ramp construction. The dead-end aisle spaces can be used for extra or emergency storage, with added profit to the building owner.

This dead-end aisle arrangement also makes it easy to set apart one bay for a repair shop, wash rack or other purpose.



## d'HUMY MOTORAMPS FOR INTER-FLOOR TRAVEL



- (1) Bernard Ave. Garage, Montreal, *Perrault & Gaudbois, Archts.*, is typical of the modern idea in building to attract patronage.  
 (2) In ascending or descending d'Humy Motoramps the motorist can always see ahead.  
 (3) Short ramps, easy grade and complete visibility are distinctive in d'Humy Motoramp construction.  
 (4) A typical storage floor. (5) d'Humy Motoramps in Poland St. Garage, London, Eng., *Walter W. Gibbings, Archt.*



# BUILDING GARAGES FOR PROFITABLE OPERATION

## d'Humy Motoramp Garages

The following tabulation records the recognition of the merit of the d'Humy Motoramp System of Garage Design, as evidenced by its incorporation in buildings in 43 cities, in three countries.

| City               | Name of Garage  | Approx. No. of cars | City                  | Name of Garage  | Approx. No. of cars |
|--------------------|---|---------------------|-----------------------|---|---------------------|
| ALBANY, N. Y.      | Albany Garage<br><i>Fuller &amp; Robinson, Architects</i>                         | 1500                | MEMPHIS, TENN.        | De Soto Garage<br><i>C. O. Pfeil &amp; C. Awsumb, Architects</i>            | 400                 |
| ATLANTA, GA.       | Ivy Street Garage<br><i>Lockwood Greene &amp; Company, Architects</i>             | 600                 | MILWAUKEE, WIS.       | Ert's Sixth Street Garage<br><i>Martin Tullgren &amp; Sons, Architects</i>  | 450                 |
| ATLANTA, GA.       | Central Garage*<br><i>Pringle &amp; Smith, Architects</i>                         | 400                 | MINNEAPOLIS, MINN.    | Baker Office Building Garage*<br><i>Larsen &amp; McLaren, Architects</i>    | 387                 |
| BINGHAMTON, N. Y.  | Franklin Service Station<br><i>Arthur T. Lacey, Architect</i>                     | 230                 | MINNEAPOLIS, MINN.    | Oakland Service Station<br><i>Perry A. Grosier, Architect</i>               | 100                 |
| BOSTON, MASS.      | Bowdoin Square Garage*<br><i>Ralph Harrington Doane, Architect</i>                | 845                 | MONTREAL, CANADA      | Royal Garage<br><i>Nobbs &amp; Hyde, Architects</i>                         | 400                 |
| BOSTON, MASS.      | Jordan Marsh Garage*<br><i>H. M. Haven &amp; A. T. Hopkins, Inc., Architects</i>  | 800                 | MONTREAL, CANADA      | Bernard Avenue Garage<br><i>Perrault &amp; Gudois, Architects</i>           | 180                 |
| BUFFALO, N. Y.     | Statler Hotel Garage<br><i>George B. Post &amp; Sons, Architects</i>              | 550                 | NEWARK, N. J.         | Washington Terminal Garage<br><i>Marshall N. Shoemaker, Architect</i>       | 500                 |
| BUFFALO, N. Y.     | Downtown Garage<br><i>Esenwein &amp; Johnson, Architects</i>                      | 400                 | NEW HAVEN, CONN.      | Von Beren Garage*<br><i>Brown &amp; Van Beren, Architects</i>               | 200                 |
| BUFFALO, N. Y.     | Swan Garage<br><i>F. J. &amp; W. A. Kidd, Architects</i>                          | 220                 | NEW ORLEANS, LA.      | Iberville Garage<br><i>William E. Spink, Architect</i>                      | 450                 |
| CHICAGO, ILL.      | Chicago Central Garage*<br><i>Robert O. Derrick, Inc., Architect</i>              | 692                 | NEW ORLEANS, LA.      | Clarke Garage<br><i>Favrot &amp; Livaudais, Architects</i>                  | 300                 |
| CINCINNATI, OHIO   | Sycamore Hammond Garage<br><i>Ferro Concrete Construction Company, Architects</i> | 368                 | NEW YORK, N. Y.       | Brisbane's 5th Avenue Garage*<br><i>Emery Roth, Architect</i>               | 750                 |
| CINCINNATI, OHIO   | Alms Hotel Garage*<br><i>Ferro Concrete Construction Company, Architects</i>      | 324                 | PATERSON, N. J.       | Alexander Hamilton Garage<br><i>Fred W. Wentworth, Architect</i>            | 400                 |
| CINCINNATI, OHIO   | Gibson Garage<br><i>Frank Hill Smith, Inc., Architect</i>                         | 300                 | PHILADELPHIA, PA.     | Aldine Garage*<br><i>The Ballinger Company, Architects</i>                  | 300                 |
| CINCINNATI, OHIO   | Vernon Manor Garage<br><i>Samuel Hanneford Sons, Architects</i>                   | 200                 | PHILADELPHIA, PA.     | 12th Street Garage<br><i>M. Haupt, Architect</i>                            | 250                 |
| CINCINNATI, OHIO   | Auto Hotel<br><i>Carl G. Preis, Architect</i>                                     | 168                 | PITTSBURGH, PA.       | Sixth Avenue Garage*<br><i>Robert O. Derrick, Inc., Architect</i>           | 788                 |
| CLEVELAND, OHIO    | Rockefeller Office Building Garage<br><i>Alfred W. Harris, Architect</i>          | 170                 | PITTSBURGH, PA.       | Penn Avenue Garage*<br><i>Robert O. Derrick, Inc., Architect</i>            | 486                 |
| COLUMBUS, OHIO     | Broadwin Apartments Garage<br><i>Otto C. Darst, Architect</i>                     | 70                  | POUGHKEEPSIE, N. Y.   | Nelson House Garage<br><i>Edward C. Smith, Architect</i>                    | 160                 |
| DAYTON, OHIO       | Mearick Garage<br><i>Schenck &amp; Williams, Architects</i>                       | 360                 | PROVIDENCE, R. I.     | Snow Street Garage<br><i>P. Martin, Architect</i>                           | 500                 |
| DENVER, COL.       | Autohotel<br><i>Ireland &amp; Parr, Architects</i>                                | 220                 | ST. LOUIS, MO         | 18th Street Garage<br><i>Klinstein &amp; Rathman, Architects</i>            | 1250                |
| DETROIT, MICH.     | Detroit Garages, West Unit<br><i>Robert O. Derrick, Inc., Architect</i>           | 600                 | ST. LOUIS, MO         | Broad-Wal Garage<br><i>Kermerly &amp; Stiegemeyer, Architects</i>           | 330                 |
| DETROIT, MICH.     | Detroit Garages, East Unit<br><i>Robert O. Derrick, Inc., Architect</i>           | 400                 | ST. LOUIS, MO         | Vandervoort Department Store Garage<br><i>C. McCord, Architect</i>          | 300                 |
| DETROIT, MICH.     | Detroit Garages, North Unit<br><i>Robert O. Derrick, Inc., Architect</i>          | 400                 | ST. LOUIS, MO         | Commodore Garage<br><i>George E. Wells, Architect</i>                       | 300                 |
| DETROIT, MICH.     | Whitney Office Building Garage<br><i>Smith, Hinchman &amp; Grylls, Architects</i> | 400                 | ST. PAUL, MINN.       | City Motor Supply Garage<br><i>Walter C. Nippolt, Architect</i>             | 250                 |
| DETROIT, MICH.     | Detroit News Garage<br><i>Albert Kahn, Inc., Architect</i>                        | 400                 | SAN FRANCISCO, CAL.   | North Central Garage<br><i>Powers &amp; Ahuden, Architects</i>              | 192                 |
| DETROIT, MICH.     | Baltimore Cass Garage<br><i>Albert Kahn, Inc., Architect</i>                      | 300                 | SCRANTON, PA.         | Hotel Casey Garage*<br><i>Lester Merritt Davis, Architect</i>               | 600                 |
| FORT WAYNE, IND.   | Yellow Taxi Garage<br><i>Charles R. Weatherhogg, Architect</i>                    | 130                 | SEATTLE, WASH.        | Four Stores Garage<br><i>Harlan Thomas &amp; Clyde Grainger, Architects</i> | 500                 |
| INDIANAPOLIS, IND. | Circle Motor Inn<br><i>Bass, Knowlton &amp; Company, Architects</i>               | 250                 | SEATTLE, WASH.        | Times Square Garage<br><i>Stoddard &amp; Son, Architects</i>                | 500                 |
| INDIANAPOLIS, IND. | Empire Garage<br><i>George Fuller Greene, Architect</i>                           | 160                 | SEATTLE, WASH.        | Olympic Hotel Garage<br><i>Robert Reamer, Architect</i>                     | 400                 |
| KANSAS CITY, MO    | No. 3 Federal Garage*<br><i>George Fuller Greene, Architect</i>                   | 130                 | SEATTLE, WASH.        | Cherry Street Garage<br><i>Schack, Young &amp; Meyers, Architects</i>       | 230                 |
| LIMA, OHIO         | Auto Hotel<br><i>Leech &amp; Leech, Architects</i>                                | 100                 | SEATTLE, WASH.        | T-A-G Garage<br><i>Charles H. White, Architect</i>                          | 150                 |
| LONDON, ENGLAND    | Poland Street Garage<br><i>Walter W. Gibbings, Architect</i>                      | 300                 | TACOMA, WASH.         | Motoramp Garage<br><i>A. J. Russell, Architect</i>                          | 350                 |
| LOS ANGELES, CAL.  | Mutual Garage<br><i>Stanton, Reed &amp; Hibbard, Architects</i>                   | 600                 | TOLEDO, OHIO          | Municipal Garage<br><i>Langdon, Hohly &amp; Gram, Architects</i>            | 200                 |
| LOS ANGELES, CAL.  | Auto Center<br><i>Noerenberg &amp; Johnson, Architects</i>                        | 550                 | TORONTO, CANADA       | St. James Garage*<br><i>Ross &amp; MacDonald, Architects</i>                | 416                 |
| LOS ANGELES, CAL.  | Jonathan Club Garage<br><i>Schultze &amp; Weaver, Architects</i>                  | 500                 | TORONTO, CANADA       | Central Motor Apartments<br><i>James, Proctor &amp; Redfern, Architects</i> | 230                 |
| LOS ANGELES, CAL.  | Carondelet Garage<br><i>Shields, Fisher &amp; Lake, Architects</i>                | 500                 | WASHINGTON, D. C.     | Carlton Garage<br><i>Wardman Construction Company, Architects</i>           | 350                 |
| LOUISVILLE, KY.    | Wheeler Garage*<br><i>Brintin B. Davis, Architect</i>                             | 390                 | WEST PALM BEACH, FLA. | Barco Garage<br><i>A. I. V. Wilson Company, Architects</i>                  | 200                 |
| LOUISVILLE, KY.    | 5th Street Garage<br><i>D. X. Murphy &amp; Bro., Architects</i>                   | 135                 | YORK, PA.             | Penn Hotel Garage<br><i>John A. Dempwolf, Architect</i>                     | 250                 |

\* Garage under construction September, 1925.



## The Scope of the Services Offered by Ramp Buildings Corporation

### **Consultation**

#### **On Car Storage Layouts for Multi-floor Buildings**

Through the Company's Consulting Service, there is made available to the Architect and his client, the preparation of studies and miniature sketches\*, covering the most efficient layout of the garage building under consideration, as to Location of Entrance and Control Facilities (lobby, offices, cashier's cage, parcel room, waiting room, toilets, filling station, stairway, passenger elevators, shop, etc., etc.); Establishing the Critical Dimensions, (such as ceiling heights, sizes of bays; car space widths; ramp widths and lengths; turning diameter; grade of ramps; width of aisles; location of columns); Location of Washing and Greasing Facilities, etc., and Arrangement and Location of the d'Humy Motoramp System of Inter-floor Travel.

To cover the Continuing Service of the Company and the use of the d'Humy Motoramp System of Inter-floor Travel, after the preliminary studies have been made and at the stage where the size of the building has been more or less definitely determined, a contract is entered into with the Owner, through the Architect, specifying the Company's charge, terms of payment and conditions incident to the use of the d'Humy Motoramp System of Inter-floor Travel.

This Continuing Service includes also the checking of Architects' preliminary and final plans, in-so-far as this relates to the work outlined in the preceding paragraph. Where it seems advisable, the visit of an R. B. C. Engineer to the construction work, at the time of pouring the first Motoramp, is included.

### **Assistance in Financing**

To clients desirous of financial assistance, in cases where the land is owned, and if satisfactory earnings are indicated, Ramp Buildings Corporation can arrange substantial first mortgage loans and in certain instances might assist in the underwriting of junior securities.

#### **Garage Location, Capacity and Earnings Studies**

Fundamental studies of location, indicated capacity, estimated patronage and earnings, with complete confidential reports of the findings, made by Ramp Buildings Corporation engineers, are available on the basis of a nominal per diem fee and expenses.

#### **Leasing and Management Contracts**

Where Garage Building Owners are desirous of assuring the efficient operation of their property, Ramp Buildings Corporation will gladly discuss taking over the operation on a basis of a lease or management contract. Our Operating Division is backed by years of experience in the study of garage operating and management problems, by an established operating consulting service, and active, successful garage operation, supervised directly by our own personnel. Our Operating Division is prepared to operate and manage for individual or corporate owners, who are not desirous of engaging personally in garage operation, in any part of the United States.

The same policies and standards which obtain in the rendering of Ramp Buildings Corporation's engineering service are applied in the performance of our management activities.

\* NOTE:—The preparation of preliminary layout sketches, in miniature, is a service rendered to Architects without cost or obligation. In doing this we work to best advantage when given the information outlined on our "Request" form, enclosed. Additional copies will be sent on request.







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